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MARKETABILITY DISCOUNTS – IS NEW REALLY BETTER?

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Introduction. The days of taking a 35% marketability discount with no support or explanation whatsoever have been gone for a good while. If some people had their way, the days of taking a marketability discount based solely on the data in the traditional restricted stock and initial public offering (IPO) studies would be gone as well. New efforts in the business valuation field attempt to calculate by objective formula that which may be better measured based on observed historical data. Where this all ends up remains to be seen, however, some courts have latched on to this “new math” and business valuation practitioners and customers must be aware of the new trend in the field of marketability discounts. This article will discuss the widely-accepted philosophy behind the marketability discount, the restricted stock and IPO studies traditionally used to support the discount, and the “new math” of some of the current efforts to quantify the discount. Our conclusion is that new does not necessarily mean better and some traditions, while not perfect, are still better than anything else available.



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The Marketability Discount. It has been widely accepted for a long time that shares in a privately-held company are less valuable than shares in a publicly-traded company due to the inability of a shareholder of the former to enjoy and employ the

immediate liquidation available to a shareholder in the latter. Even the IRS and proponents of the miniscule marketability discount allow that the discount exists. For example, Revenue Ruling 77-287 specifically states that, “securities traded on a public market generally are worth more to investors than those that are not traded on a public market.” Also, in *Firm Value and Marketability Discounts*, (a presentation at the 2002 ASA Business Valuation Conference) co-authors Bajaj, Denis, Ferris and Sarin state that investors value marketability and will pay more for an asset that is readily marketable than for an otherwise identical asset that is not readily marketable.

The Bajaj, Denis, Ferris and Sarin presentation defines the concept of marketability as to how quickly an asset can be converted to cash without the owner incurring substantial transaction costs or price concessions. In the presence of transaction costs, buyers will demand a reduction of the price of an asset equal to the cost of converting the asset to cash. Opportunity costs play a role as well, as investors do not have free access to their investment in order to convert it to a perceived higher paying investment if the opportunity arises. The greater the risk of loss in value during the period of illiquidity, the higher the discount for lack of marketability (DLOM).

The DLOM is believed to capture more than just illiquidity. While business valuation practitioners tend to consider the DLOM as a single component (capturing the difference in value between a public company equivalent stock and a private company stock), some academics break-up the discount into various components, such as monitoring or assessment costs,

MARKETABILITY (continued)

bid-ask spreads, etc.

There are two broad methodologies for developing a DLOM for a non-controlling interest in a private company. An entirely different set of studies that deal with controlling interests in private companies also exists, however, the focus of this article is on the marketability discount for the non-controlling interest in the privately-held company. The two broad marketability discount methodologies for non-controlling interests are as follows:

- 1. Benchmark Analysis.** This methodology is based on historical data and observations of actual market transactions. There are two major sources of this data: **(1) Restricted Stock Studies** and **(2) Initial Public Offering (IPO) Studies**.
- 2. Quantitative Models.** This methodology is based on calculations and computations of various marketability discount models, using various inputs to estimate the DLOM for a non-controlling interest in a privately-held company. There are two subsets to the quantitative models methodology: **(1) Rate of Return Models** (which utilize a discounted cash flow analysis) and **(2) Option-Based Models**, (which apply option pricing techniques).

Regardless of the methodology or method used, it is also instructive to include a factor-by-factor comparison of various characteristics of the subject company that impact the marketability of a non-controlling interest in that company's shares. One example of the various marketability factors to consider is found in the *Mandelbaum* case. This analysis is discussed in more detail later in this article.

Benchmark Analysis: Restricted Stock Studies. The two benchmark studies (restricted stock and IPO studies) are the Arnold Palmer and Jack Nicklaus of marketability discount studies. They have been around a long-time, are very popular, and have a significant number of victories. Restricted stock (also called "letter stock") is stock issued by a corporation that is either not registered with the SEC and cannot be sold into the public market, or is registered with the SEC but is restricted from sale into the public market. The stock is usually issued when a corporation is first going public, making an acquisition or raising capital. Corporations issue restricted stock to avoid dilution of their stock price and to avoid the costs of registering the

securities with the SEC.

Securities bought under Regulation D (a safe harbor regulation) are restricted from resale without either registration with the SEC or an exemption. The exemptions were originally granted under Rule 144, which allows the limited resale of unregistered securities after a minimum holding period of two years. Resale is limited to the higher of 1% of outstanding stock or average weekly volume over a four week period prior to the sale, during any three month period. Therefore, a holder of restricted stock must either register their securities with the SEC or obtain a Rule 144 exemption, in order to sell their stock in the public market. A holder of restricted stock can, however, trade the stock in a private transaction (source: "Restricted stock discounts decline as result of 1-year holding period," by Kathryn F. Aschwald, CFA, ASA, *Shannon Pratt's Business Valuation Update*, May 2000).

Because the only difference between the two classes of shares is marketability, price differences between the two classes of shares are cited as being only as a result of differences in marketability. Data from the Restricted Stock Studies can be shown in three classifications: (1) studies including pre-1990 data only, (2) studies including at least some post-1990 data, and (3) one study consisting of post-1997 data exclusively. The reason for these classifications is due to two key events that occurred in 1990 and 1997, respectively:

1. In 1990, the SEC adopted Rule 144A, which relaxed the filing restrictions on private transactions. Rule 144A allows qualified institutional investors to trade unregistered securities among themselves without filing registration statements. Therefore, a limited market was created for restricted securities in that year. The impact of this relaxation of filing requirements resulted in a drop of the average DLOM in the pre-1990 time frame to the 1990-1997 time frame.
2. In 1997, the SEC changed the holding period requirements in Rule 144 to permit the resale of limited amounts of restricted securities by any person after a one-year. This was a reduction from the prior two-year holding period requirement. Also, the amendment permitted the unlimited resale of restricted securities held by non-affiliates of the issuer after a holding period of two years, rather than three years. The impact of these changes resulted in a further drop of the DLOM, however, this observed

MARKETABILITY (continued)

drop is based on only one study available in the post-1997 era.

As explained above, the decline in discounts is due to the relaxing of restrictions with the introduction of Rule 144A, which increased deal volume and resulted in more and better information becoming available. Because there are more market participants, liquidity has increased. Reducing the resale waiting period from two years to one year clearly reduced illiquidity and increased marketability. One key factor to consider with the restricted stock studies is that the liquidity horizon for a privately-held company may be five years, ten years, twenty years, or fifty years, much longer than the time frame (one or two years) in the restricted stock studies. Depending on the particularities of the specific company and interest being valued, this evidence strengthens the proposition that a discount for lack of marketability for a privately-held company (which may have an indefinite or at least a much longer liquidity horizon than one or two years) could be even greater than the discounts observed in the restricted stock studies.

Benchmark Analysis: IPO Studies. This method estimates the DLOM by comparing the share price of company stock when it is privately-held and not freely-traded to the share price of the company following its public offering. For example, if a shareholder disposes of company stock at \$6.00 per share and the stock is subsequently brought public at \$10.00 per share, a marketability discount of 40% is calculated. The observed discounts in the IPO studies are similar to the discounts seen in the older restricted stock studies (i.e., those restricted stock studies conducted when the holding period was two years) and can be significant. This too may argue for a significant marketability discount for the private company being valued given that shareholders in some pre-IPO companies may at least have the suspicion that an IPO could be coming shortly and thus be able to achieve a higher sale price in a private transaction due to the possibility of a public market for the stock. By contrast, many privately-held companies have little or no chance of an IPO and a buyer of the shares would not be willing to pay any premium for an IPO that likely will never come.

Quantitative Analysis: Rate of Return Models. As noted earlier, there are two types of general methods within the Quantitative Analysis method: Rate of Return Models and Option-Based Models. Option-Based Models are discussed in the following section.

One Rate of Return Model is the Quantitative Marketability Discount Model (QMDM), developed by Z. Christopher Mercer, ASA, CFA, in the early 1990s. The QMDM is based on modern financial theory which states that the market value of a business is the present value of its anticipated cash flows. The common formula for this is the Gordon Dividend Discount model (also known as the Gordon Growth model).

In the case of a freely traded security, the value to a shareholder is the present value of all the cash flows of the business, discounted at an appropriate discount rate to today's present value. The public company shareholder can receive these cash flows either through dividends or through the sale of the security. By definition, the sale price of a publicly-traded security is the present value of the anticipated future cash flows of that security. In other words, the mechanism of the public market guarantees that the public company stock price is based upon the Gordon Growth model. However, because a shareholder in a private company cannot sell the security in a public market, the Gordon Growth model needs to be modified for its use in the QMDM.

With QMDM each component of the Gordon Growth model must be determined from the perspective of the non-controlling shareholder. Various factors that can reduce the market value of private company stock owned by a non-controlling shareholder include:

1. The payment of sub-optimal dividends or distributions (due to such factors as the controlling shareholder paying himself an excessive salary, the reinvestment of company earnings in sub-optimal investments, etc.).
2. A higher level of risk associated with the non-controlling shareholder receiving his share of interim distributions, or higher risk from a non-controlling standpoint that a liquidity event (i.e., the sale of the company) will occur in the distant future or not at all. This results in a higher discount rate and lower value.
3. A sub-optimal growth rate for the company's value due to poor investments or decisions by the controlling shareholder.

The QMDM modification of the Gordon growth model from the perspective of the non-controlling shareholder in the privately-owned company is as

MARKETABILITY (continued)

follows (source: *Valuation Strategies*, March/April 2000):

$$\text{Present Value} = \frac{\text{Expected Cash Flow}}{\text{Discount Rate} - \text{Growth Rate}}$$

There are four major subjective component inputs needed to use the QMDM:

1. WHEN will the non-controlling shareholder achieve liquidity?
2. At what VALUE will the non-controlling shareholder achieve liquidity?
3. What is the amount and frequency of DISTRIBUTIONS received by the shareholder until liquidity is achieved?
4. What is the appropriate DISCOUNT RATE (rate of return for risk) to use during this period?

As seen above, there are many speculative assumptions that must be made in using the QMDM. The effect of these assumptions is that the QMDM provides widely varying results based on minor changes in the inputs. As of the present time, the QMDM model has not gained widespread acceptance in the valuation field.

Quantitative Analysis: Option-Based Models. The other category under Quantitative Analysis is Option-Based Methods. Option pricing theory can be used to calculate the cost of hedging or covering the value of a security over a specified period using a put option. In its use for quantifying the DLOM for illiquid stock in a private company, the cost of purchasing a put option represents the cost of buying “insurance.” In effect, the purchaser of a put option ensures that he or she will be able to realize the current value of the stock today at some point in the future, even if the value of that stock declines. The cost of the put option is the implied DLOM. For example, if a put option on stock worth \$100 per share costs \$20, the DLOM to ensure the \$100 value in the future is 20%.

There are at least five Option-Based Methods “on the market” today. Although option pricing models can be very effective and accurate in certain situations in business valuation (where the option term is known with certainty), there are three key problems with using these models in establishing the marketability discount:

1. **Uncertain holding period.** Options models require the estimation of a holding period until liquidity can be realized for the privately-owned stock.
2. **Volatility of the stock.** An assumed long holding period (which is usually the case for the shareholder in the privately-held company) also necessitates the use of a high assumed volatility factor (i.e., standard deviation of returns). While the valuator can look to similar publicly traded companies in the same industry as a proxy for estimating this volatility, the assumption of volatility for a stock that is not publicly-traded in the first place is somewhat of a stretch. Also, a longer assumed holding period for a stock also requires a greater volatility assumption with both factors driving up the cost of the put option and, in turn, the DLOM.
3. **Assumption that put options are available for closely held stock.** Inherent in using an option model to determine the DLOM is the assumption that this type of insurance is available to limit the downside risk in the value of the privately-held stock. While this insurance is available to owners of publicly-traded stock, it does not exist for the owner of privately-held shares.

The upshot of the first two assumptions (which are pure guesses as they cannot be grounded in fact) is usually a marketability discount much higher than the discounts reported in the restricted stock and IPO studies discussed earlier. In some cases, the use of only a three-year time horizon for liquidity results in calculated marketability discounts of 60% or higher. In reality, shareholders in the subject private company being valued may have a time horizon much longer than that. Banister has valued companies that have been privately-held for over one hundred years. As to the third and equally problematic assumption, the ability to buy put options for closely held company shares does not exist. While this model may be valid for restricted, publicly traded shares, its applicability to privately-held shares is suspect. Finally, as with the QMDM, Option-Based Models also have not gained wide acceptance in the field.

Positives and Negatives of the Various Models. There is no perfect marketability discount methodology or model. Each methodology or model has its various shortcomings and critics. Some of the various positives and negatives associated with the

MARKETABILITY (continued)

marketability discount methodologies and models are as follows:

Benchmark Analysis Positives:

1. These studies are based on actual transactions and not on calculations that often require a number of subjective or unsupported assumptions.
2. These studies have existed for much longer and are believed to be used and accepted by a greater number of business valuation practitioners than the quantitative models.
3. These studies are easier to understand and explain than the quantitative models.
4. The IPO studies are based upon the share prices of private companies before they become public. As indicated earlier, some of the quantitative models are based solely upon public market data.

Benchmark Analysis Negatives:

1. One issue impacting the use of the IPO data is that such data only includes the results of successful IPOs. This is referred to as survivorship bias. Since successful companies are assumed to have a higher share price than an unsuccessful IPO company, there is a bias toward larger discounts embedded in the data.
2. Another issue impacting the use of the IPO data is the fact that the pre-IPO transactions are typically between related parties, i.e., employees getting shares as part of a compensation package. This would also tend to drive-up the discount, assuming that the insiders are getting favorable pricing relative to a true outsider buying shares while the company was still private.
3. Insider transactions and the issue of embedded compensation also may have an impact on the restricted stock studies with favorable pricing in private placements in exchange for the expectation of providing additional capital in the future.
4. Many of the restricted stock studies involve samples of limited size (well under 100 transactions) over an extended period of time. This increases the potential

for sampling errors.

5. Most publicly-traded firms do not issue restricted stock. Firms issuing restricted stock tend to be smaller, riskier and less healthy than the typical company. This is another form of selection bias (source: "The Cost of Illiquidity," by Aswath Damodaran, presentation at AICPA National Business Valuation Conference, 2006).

Quantitative Analysis Positives:

1. Because they are based on calculations and formulas, these models have the *potential* of determining what arguably could be a more objective DLOM, however, significant shortcomings and flaws with the inputs in these models limit their ability to achieve the desired objectivity.
2. While not as widely accepted or used by business valuation practitioners, these models are gaining increasing attention in the industry. Whether this attention translates to acceptance, however, remains to be seen.

Quantitative Analysis Negatives:

1. The Rate of Return Models (primarily the QMDM) require a significant number of what can be highly subjective or uncertain inputs. Slight changes in these inputs can result in wide swings in the estimated DLOM, thus compromising the assumed accuracy of the model.
2. These methods are relatively recent (although the QMDM has existed for some time) and have not gained wide acceptance among business valuation practitioners or the courts.
3. These models are more difficult to explain than the use of the restricted stock or IPO studies.
4. While it is possible to calculate the hypothetical cost of a put option for a private company, no such market exists.
5. Some of the option-pricing models are based solely on public company information. By contrast, the restricted stock and IPO studies each use transaction values of non-public company stock in its data.

MARKETABILITY (continued)

6. Liquidity provides the right to sell an asset at the *prevailing market price* over a certain period, not the right to sell an asset at *today's price* (the current minority, marketable value of the private company at issue) at any point over the specified period.
7. In a put option-pricing model, the stock price volatility of a private company must be estimated or assumed, because by definition no public market for these shares exist.

A Framework for the Marketability Analysis.

As noted earlier, regardless of the methodology or method used to establish the DLOM, it is instructive to conduct a factor-by-factor comparison of various characteristics of the subject private company that impact the marketability of a non-controlling interest in that company's shares. One example of the various marketability factors to consider is found in the *Mandelbaum* case (*Bernard Mandelbaum, et. al. v. Commissioner*, TC Memo 1995-225). In *Mandelbaum*, ten factors were discussed as considerations for the determination of the appropriate DLOM for a non-controlling interest in a privately-held company. The first factor is consideration of the empirical (i.e. restricted stock and IPO) studies as a starting point for obtaining DLOM data. The remaining nine factors address specific factors about the privately-held company and the specific interest being valued. These factors are as follows:

1. Financial statement analysis.
2. Dividend policy.
3. Nature of the company, its history, position in the industry, and economic outlook.
4. Management.
5. Amount of control in the shares valued.
6. Restrictions on the transferability of the shares.
7. Holding period for the stock.
8. Redemption policy for the stock.
9. Costs associated with a public offering.

The *Mandelbaum* analysis should not be seen as exhaustive as other important factors may warrant consideration in the determination of the marketability discount. *Mandelbaum* does, however, provide a good framework for the marketability analysis.

Summary. Earlier in this article, the restricted stock and IPO studies were called the Arnold Palmer and

Jack Nicklaus of marketability discount studies. The problem with the current crop of Quantitative Models (either Rate of Return or Option Pricing) is that no Tiger Woods has emerged from this group. In fact, none of these models have yet to earn their PGA Tour card. The promise of objective and certain quantification of the marketability discount is alluring but may be illusory in the end. Try as we might, some things in life (the weather, love, marketability discounts) just cannot be reduced to formula and historical observations of actual events remain the best measure. ♦

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